DATE PREPARED: June 13, 2007	**ISS PAYLOAD OFFICE PIRN/EXCEPTION FORM**	**PAGE 1 OF 6**

Doc. No., Rev. & Title:	**SSP 57003, Revision C, Attached Payload Interface Requirements Document SSP 57213, Initial Release, Alpha Magnetic Spectrometer (AMS) Interface Control Document**	PIRN No: **57213-NA-0010**

TITLE:

AMS (Alpha Magnetic Spectrometer) – PVGF Clearance Intrusion

Originator:	PIRN Type:	FAX Approval Signatures to this Number:
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Agency Tracking No.: **57213-0005**	SYSTEM/ELEMENT AFFECTED & STAGE EFFECTIVITY: **AMS Launch through End Of Life**	

REASON FOR CHANGE OR REQUIREMENT(S) VIOLATION:

AMS PVGF clearance envelope requirement as defined in SSP-57003, Paragraphs 3.7.3.3.1 is violated.

PARAGRAPHS, FIGURES, TABLES AFFECTED (For PIRN use only)

Page	Paragraph(s)	Figures(s)	Table(s)	R	A	D
3-74	3.7.3.3.1	N/A	N/A			

AFFECTED INTERFACING PARTIES

	SIGNATURE & ORGANIZATION	DATE	SIGNATURE & ORGANIZATION	DATE	SIGNATURE & ORGANIZATION	DATE
CONCUR	/s/ Dave Hornyak/ OZ3	03/02/09	/s/ Michael Berdich/ OM7	02/04/09		
	/s/ Vic Sanders/ Boeing PEI	02/26/09	/s/ Kirsty Reidy/ Boeing EVR	02/20/09		
	/s/ Sharm Baker/ S&MA	02/25/09	/s/ Larry Grissom/ ER3	02/25/09		
	/s/ Trent Martin/ AMS	02/02/09	/s/ John Uri/ PCB	03/02/09		

SSP 57003 Requirement:

Requirement Number: **3.7.3.3.1**
Requirement Title: **ATTACHED PAYLOAD ENVELOPES**

An Attached Payload requiring SSRMS support shall provide a clearance envelope as specified in SSP 42004, paragraph N3.2.2.1.

Proposed AMS Payload Exception:

Requirement Number: **3.7.3.3.1**
Requirement Title: **ATTACHED PAYLOAD ENVELOPES**

An Attached Payload requiring SSRMS support shall provide a clearance envelope as specified in SSP 42004, paragraph N3.2.2.1**, except for the AMS payload will have an intrusion as shown in Figures 3.7.3.3.1-AMS-01, 3.7.3.3.1-AMS-02, and figure 6 from MAGIK AI 2279.**

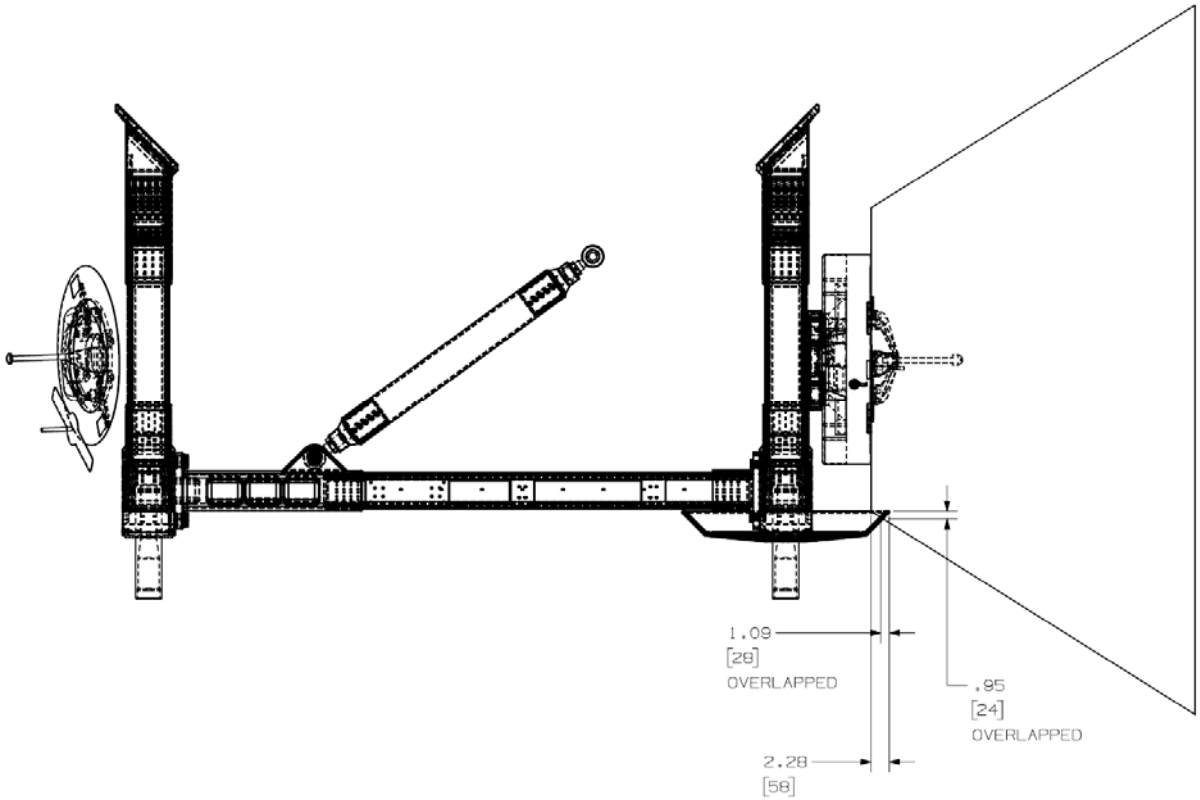

Figure 3.7.3.3.1-AMS-01: AMS PVGF Envelope Violation
Dimensions in figure above are inches [mm]

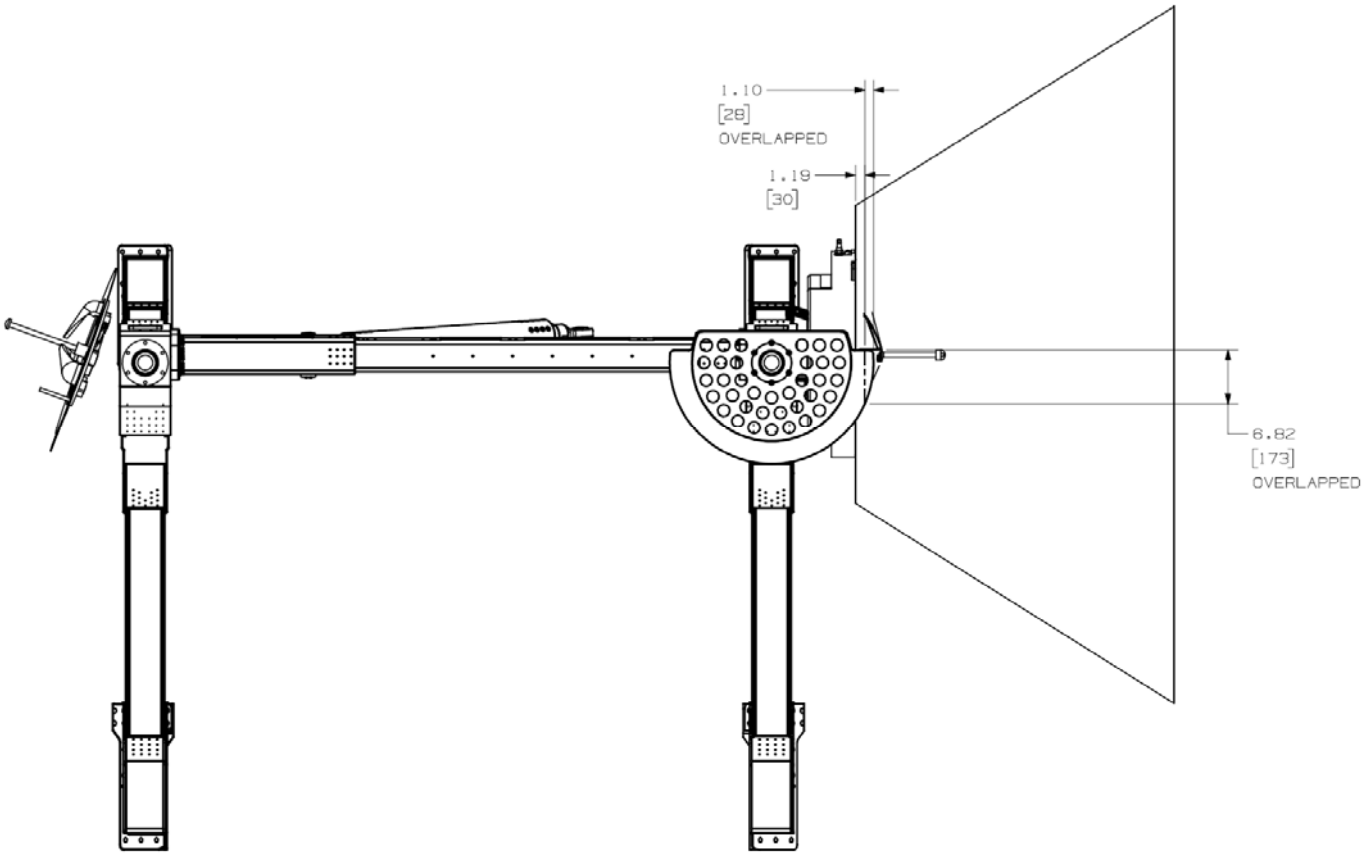

Figure 3.7.3.3.1-AMS-02: AMS PVGF Envelope Violation
Dimensions in figure above are inches [mm]

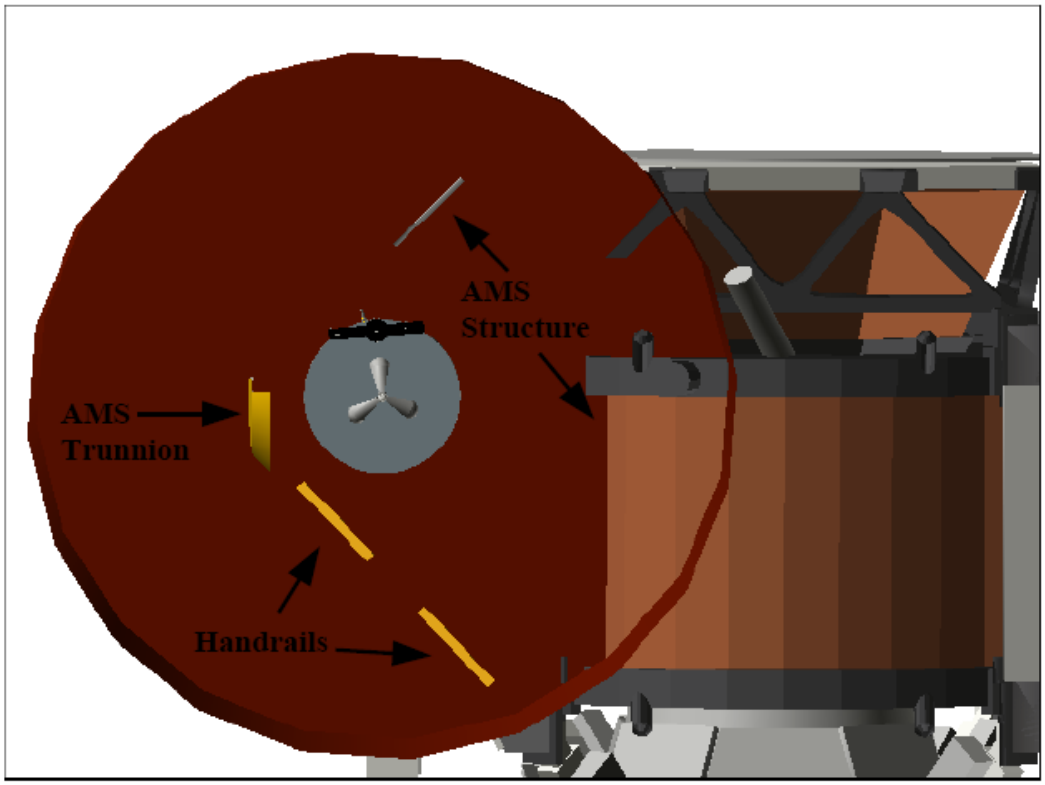

Figure 6: PVGF EVA Envelope with Violations by AMS Structure and EVA Handrails

Rationale:

The AMS payload, along with the ISS office, have performed extensive analyses and testing of this envelope intrusion. The assessments have included MAGIK analyses of payload berthing (AI 1254, AI 1965, AI 2279), EVA worksite analyses (LMSO Q105743), and NBL test (Crew Consensus Report 11.12.02). Per Crew Consensus Report (AMS NBL 11.12.02), EVA access to the PVGF contingency release bolt is acceptable.

Scuff plate intrusion into the SSRMS static approach envelope is near the edge of the envelope at the point when the SSRMS would have captured the PVGF.

This small interference into the PVGF envelope appears to pose no concern for the SSRMS.

PEI Analysis:

PEI agrees with the Rationale and with NASA ER3 concurrence provided via e-mail (attached) on November 19, 2008, which states: “ER concurs with the intent of the subject Exception. The clearance violation is at the base of the PVGF such that the LEE would have to drop to within approximately 1 inch of the PVGF base to incur the violation and contact the PRLA trunnion scuff plate”.

MAGIK provided figure 3.7.3.3.1-AMS-03 shows 4 inches separation between the AMS scuff plate and the SSRMS Latching End Effector (LEE) when the LEE is attached to the AMS PVGF. This confirms that the AMS scuff plate intrusion into the PVGF SSRMS LEE approach envelope does not prevent the SSRMS LEE operation with the AMS PVGF.

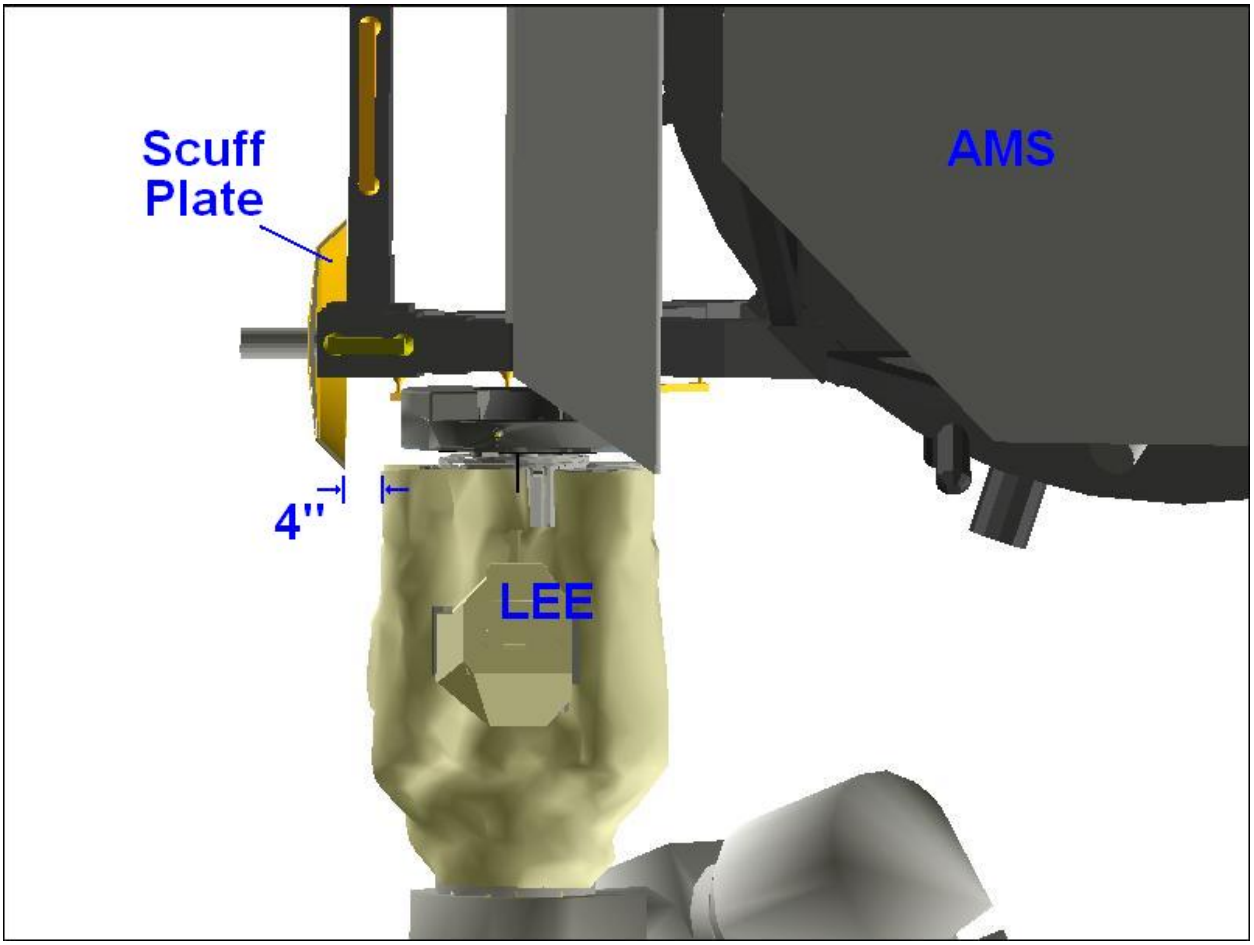

Figure 3.7.3.3.1-AMS-03: AMS Scuff Plate and SSRMS LEE

PEI Recommendation:

Approve as written.

Operational Constraints: (As Needed)

None identified by PEI

Operational Constraints Rationale: (As Needed)

None identified by PEI

PTR Recommendation:

Approved as written.

PCB Disposition:

Approved as written.